



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,066	09/29/2003	Grzegorz Stachowiak	3691-587	4713
23117	7590	08/10/2005		
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER BLACKWELL RUDASIL, GWENDOLYN A	
			ART UNIT	PAPER NUMBER

1775

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,066

Applicant(s)

STACHOWIAK, GRZEGORZ

Examiner

Gwendolyn Blackwell

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15, 17-20 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15, 17-20 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group 1, claims 1-21 and 24 in the reply filed on May 20, 2005 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-13, 15, 17-20, and 24 are rejected under 35 U.S.C. 112, second paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant's independent claims 1, 15, and 24 indicate that there is "no infrared (IR) reflecting layer comprising significant amounts of Ag and Au". Applicant specifically states as page 3, section 0010 of the present specification that the IR reflecting layer can be NiCr, Nb, NbZrN_x, or *any other suitable material*", [emphasis added]. There is no teaching or suggestion by Applicant in the specification that Ag and Au should not be present in the IR reflecting layer. The above limitation had been claimed as originally filed. To make the specification commensurate in scope with the claims it is suggested to incorporate the abovementioned limitation into the specification.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3-6, 8-18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Application Publication no. 2002/0064662, Lingle '662, in view of United States Patent no. 5,543,229, Ohsaki et al further in view of United States Patent no. 5,688,585, Lingle '585.

Regarding claims 1, 15, 18, and 24

Lingle '662 disclose a heat treatable low emissivity coated substrate having a layer system comprised of the following, (page 2, sections 0027-0037):

at least one dielectric layer/a 1st contact layer/a 1st IR reflecting layer/a 2nd contact layer/at least one additional dielectric layer/a 3rd contact layer/a 2nd IR reflecting layer/a 4th contact layer/at least one additional dielectric layer.

The first dielectric layer can be tin oxide with a layer of silicon nitride formed thereon, (page 3, sections 0073-0074). Silver, gold, or any other suitable IR reflecting material is used for the IR reflecting layer, (page 4, section 0076). Lingle '662 does not specifically disclose the other suitable IR reflecting materials that can be used for the IR reflecting layer.

Lingle '585 disclose a heat treatable coated glass substrate comprised of three layer having the following structure, (column 9, lines 45-50):

$\text{Si}_3\text{N}_4/\text{Ni}$ or $\text{NiCr}/\text{Si}_3\text{N}_4$.

Art Unit: 1775

The layer structure has a visible transmission of 1-80%, an emissivity ranging from about 0.10-0.75, and a sheet resistance of about 20-500, (column 6, lines 15-35). The silicon nitride film can contain up to 6-wt% of aluminum, (column 9, lines 50-53). The layer system does not include the use of silver, (column 5, lines 45-46).

Ohsaki et al disclose a heat treated coated glass comprised of the a multilayered coating formed on the substrate wherein the coating is comprised of a solar control layer (IR reflecting layer) such as chromium and silver, (column 2, lines 22-33).

Lingle '662, Ohsaki et al and Lingle '585 disclose analogous inventions related to coated substrates having low emissivity properties. It would have been obvious to one skilled in the art at the time of invention to modify the IR reflective layer of Lingle '662 with the nickel/NiCr metal layer of Lingle '585 or the chromium metal layer of Ohsaki et al as Ohsaki et al discloses chromium as an equivalent of silver, (Ohsaki, column 2, lines 22-33) As silver, nickel, NiCr and chromium are considered functional equivalents it would be expected that nickel, NiCr and chromium would provide the same or substantially the same physical characteristics as a silver IR layer, with the addition of the tin oxide undercoat of Lingle '662 to enhance the antireflection properties of the film, (Lingle '662, page 3, section 0073).

Regarding claims 2-3, 8, and 17

Table 1 demonstrates that the first and second layer can have a combined thickness of 0-800 Å, (page 5, section 0084). Silicon nitride is used as a layer over the IR reflecting layer, (page 4, section 0081). Aluminum in the range of 3-20 wt % can be added to the silicon nitride layer, (page 3, section 0074).

Art Unit: 1775

When the structure recited in the reference is substantially identical to that of the claims, the claimed properties or function are presumed inherent. *MPEP 2112.01*. Because the prior art exemplifies the applicant's claimed layer structure, the claimed physical property relating to the coated article having a blue glass side reflective color would be expected to be present.

Regarding claims 6, 9, 11-12 and 20

The coated substrate can be used in an IG window unit or as a vehicle windshield, (page 1, section 0013). The coated substrate has a visible transmittance of at least 70%, (page 1, section 0007), with a sheet resistance of no greater than 10.0, (page 1, section 0015).

6. Claims 7, 19, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Application Publication no. 2002/0064662, Lingle '662 in view of United States Patent no. 5,543,229, Ohsaki et al further in view of United States Patent no. 5,688,585, Lingle '585, Lingle et al as applied to claims 1 and 15 above, and further in view of the article entitled *Thermally durable sputter-deposited tin oxide films and their applications*, Ebisawa et al.

Lingle et al disclose the limitations of claims 1 and 15 above. The tin oxide provides antireflective properties to the film, (page 3, section 0073). Lingle et al does not specifically disclose that the tin oxide layer also contains nitrogen.

Ebisawa et al disclose that nitrogen can be added to a tin oxide (SnON) film that is part of an antireflective coating, (page 308, 2nd paragraph).

Lingle et al and Ebisawa et al disclose that tin oxide can be part of antireflective films. It would have been obvious to one skilled in the art at the time of invention to modify the tin oxide film of Lingle et al through the addition of nitrogen in order to protect the tin oxide film from

Art Unit: 1775

bending and film cracks that could occur during heat treatment, (Ebisawa et al, page 308, 2nd paragraph).

Response to Arguments

7. Applicant's arguments with respect to claims 1-13, 15, 17-20, and 24 have been considered but are moot in view of the new ground(s) of rejection based upon Applicant's amending of claims. See modified rejections set forth above.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn A. Blackwell-Rudasill whose telephone number is


Art Unit: 1775

(571) 272-1533. The examiner can normally be reached on Monday - Thursday, 5:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gwendolyn A. Blackwell
Examiner
Art Unit 1775



JENNIFER MCNEIL
PRIMARY EXAMINER